

REMARKS

Applicants respectfully request reconsideration of the present application in view of the reasons that follow. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

Claim 1 is currently being amended. Entry and consideration of the amendments to claim 1 is respectfully requested. No claims are being added or cancelled. Accordingly, claims 1-17 remain pending in this application.

Drawings

In the drawings section of the Office Action, the Examiner objected to the drawings as failing to comply with 37 CFR 1.84(p)(5) because they do not include the reference signs mentioned in the description of paragraph 56 on page 12. It is believed that the Examiner intended to refer to paragraph 56 since that paragraph contained the cited reference signs. Applicants respectfully disagree, the specification as originally filed referred to both Fig. 1 and Fig. 4 (stating "Referring now to FIG. 4" in paragraph 61 and "Referring also to FIG. 1" in paragraph 62), and the reference signs cited by the Examiner are shown in Fig. 4.

However, for the sake of clarity, an amendment to the specification is submitted herewith to refer to both FIG. 1 and FIG. 4 within the paragraph that contains the reference numbers cited by the Examiner. Reconsideration and withdrawal of the objection to the drawings is respectfully requested.

Specification

The specification has been amended based on the drawings objection as described above. Entry and consideration of the amendment to the specification is respectfully requested.

35 USC §101 Rejections

In the §101 section of the Office Action, the Examiner rejected claims 1-17 under 35 USC §101 as being directed to non-statutory subject matter. Claim 1 has been amended to recite “a computer program stored on a computer readable medium” in accordance with the Examiner’s suggestion. Claims 2-17 depend from claim 1 and are directed the subject matter of claim 1. Reconsideration and withdrawal of the rejection of claims 1-17 under 35 USC §101 is respectfully requested.

35 USC §102 Rejections

In the §102 section of the Office Action, the Examiner rejected claims 1-3 and 6-10 under USC §102(b) as being anticipated by U.S. Patent No. 6,357,008 to Nachenberg (hereinafter “Nachenberg”). The Examiner stated that Nachenberg discloses “a preprocessor portion for receiving the suspect computer program and creating a logically equivalent standardized version of the suspect program” (citing Nachenberg, col. 5, lines 27-39; col. 6, line 53 – col. 7, line 22). Applicants respectfully disagree and traverse the rejection of the Examiner.

Claim 1

Claim 1 recites “a preprocessor portion for receiving the suspect computer program and creating a logically equivalent standardized version of the suspect program without executing the program.” The act of creating a logically equivalent standardized version is described in the present application as:

This standardization may be done by providing the raw code 10 to the disassembler/control-flow graph builder 22 and standardizer/annotator 26 to order the instruction lines 12 according to their execution order, eliminate nonfunctional code, convert all instruction synonyms to a standard version and abstracting variables and registers.

(Application, Paras. [0060]) Accordingly, claim 1 requires the creation of a logically equivalent version of the program.

To clarify the difference, claim 1 has been amended to clarify that creation of a logically equivalent version does not include execution of the program. Although the creation of the standardized version does not include execution of the program, it is important to recognize that execution of the program may occur before or after creation of the standardized version. For example, wherein a program contains an unpacking operation, the program may be “executed” to create an unpacked program from which the logically equivalent standardized version of the suspect program will be created. Creation of a logically equivalent standardized version of the suspect program without executing the program is neither taught nor suggested by Nachenberg.

In contrast, Nachenberg teaches execution of a program in an isolated virtual environment. Nachenberg teaches “[t]he CPU emulator 158 executes files in a fully contained

virtual environment. The virtual environment includes the virtual memory 160 which is effectively independent of the memory of the host computer system. In this way, the CPU emulator 158 is effectively isolated from the actual hardware devices 102 so that no harm can be done by a virus while a file is being simulated.” (Nachenberg, col. 6, lines 52-58) This approach is similar to the “sandbox” approach described in the background of the present application which is a safe execution area created in a computer that uses hardware and/or software to prevent the executing program from damaging interaction with the computer and to monitor attempts at such interaction.” However, executing the program in a “sandbox” does not teach or suggest creating a logically equivalent version.

In Nachenberg, the original executable program is executed in a virtual environment. The original executable program cannot be considered a logically equivalent standardized version since this executable is neither logically equivalent nor standardized as recited in claim 1 and described in the present application. Accordingly, Nachenberg does not teach nor suggest all of the elements of claim 1. Reconsideration and allowance of claim 1 is respectfully requested.

Dependent Claims 2-3 and 6-10

Claims 2-3 and 6-10 depend from claim 1 and include all of the limitations thereof. These claims are allowable for at least the same reasons as the independent claims from which they depend. Reconsideration and allowance of claims 2-3 and 6-10 is respectfully requested.

35 USC §103 Rejections

In the §103 section of the Office Action, the Examiner rejected claims 4-5 and 11-17 under USC §103(a) as being unpatentable over Nachenberg in view of U.S. Patent No. 7,188,369 to Ho, et al. (hereinafter "Ho"). The Examiner stated that Ho discloses "wherein the standardized version maps instructions of the suspect program to corresponding standard synonym instructions." (citing Ho, col. 5, line 25 – col. 6, line 40) Applicants respectfully disagree and traverse the rejection of the Examiner.

Claims 4-5 and 11-17


Claims 4-5 and 11-17 depend from claim 1 and includes all of the limitations thereof. Ho does not cure any of the above noted deficiencies of Nachenberg. Accordingly, these claims are allowable for at least the same reasons as the independent claims from which they depend. Reconsideration and allowance of claims 4-5 and 11-17 is respectfully requested.

Conclusion

Applicants believe that the present application is in a condition for allowance. Applicants appreciate consideration of the above remarks and invites that the Examiner to telephone the undersigned in the event a telephone discussion would be helpful in advancing the prosecution of the present application. The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 50-1170.

Respectfully submitted,

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